ABSTRACT

A system and method are provided to simultaneously support customized multi-priority services that can be used to transmit multi-priority data link layer frames to a destination host using single or multiple communication links. The scheme does not require any pre-assigned bandwidth reservation policy to support multi-priority services on the link(s). The received frames from single or multiple links can be queued into multi-level services as such that the transmitting device, using customized implemented priority schemes, can control the transmission of the outgoing data-link frames on per byte basis. The system processor at the sending device reserves the full control of the link(s) entire bandwidth and has the ability to release and reassign the bandwidth in any byte proportion to the data-link frames of any service at any desired byte boundary. The transmission of any declared low priority data-link frame can be interrupted in real time 'on the fly' in order to relinquish the link bandwidth and network resources to any high priority data-link frame ready for transmission. The methodology of the presented scheme is very flexible and can accommodate any number of multi-priority services on a multi-flavor data link frame environment. Also, the proposed method and system discloses a very unique and innovative technique that can be used to accommodate a diversity of data-link layer protocols simultaneously and concurrently over single or multiple physical layer communication links.